

ABSTRACT

The first invention is directed to a composite sheet of given thickness in semi-cured form, comprising a semi-cured binder (B1) and, incorporated therein, a magnetic fibrous filler (A), said semi-cured binder (B1) comprising a thermosetting component and a component resulting from curing of a photocuring component, the magnetic fibrous filler (A) orientated in the direction of the thickness of the semi-cured composite sheet.

The second invention is directed to a composite sheet of given thickness comprising a binder and a magnetic fibrous filler (A), the magnetic fibrous filler (A) orientated in the binder in the direction of the thickness of the composite sheet, the orientated magnetic fibrous filler (A) constituting a plurality of bundles.

The third invention is directed to a composite sheet of given thickness comprising a binder and a magnetic fibrous filler (A), the magnetic fibrous filler (A) orientated in the binder in the direction of the thickness of the composite sheet, the composite sheet having projections on at least one side thereof.

The fourth invention is directed to a composite sheet of given thickness comprising a magnetic fibrous

filler (A), a binder cured by heating and/or light irradiation, and organic fine particles or inorganic fine particles (C), the magnetic fibrous filler (A) orientated in the direction of the thickness of the composite sheet.

The fifth invention is directed to a composite sheet of given thickness to be interposed between a semiconductor element and a circuit substrate, comprising a magnetic fibrous filler (A) orientated in the direction of the thickness of the composite sheet, at least 80% of the magnetic fibrous filler (A) having a fiber length L_1 satisfying the relationship:

$$0.5 \times D < L_1 < (L_2^2 + D^2)^{1/2} \quad (I)$$

wherein L_1 represents a fiber length of magnetic fibrous filler (A), D represents a thickness of composite sheet, and L_2 represents a minimum distance between neighboring electrodes among neighboring-electrode distances with respect to electrodes arranged on a semiconductor element on its composite sheet side or neighboring-electrode distances with respect to electrodes arranged on a circuit substrate on its composite sheet side.